Simulation of Richtmyer-Meshkov Instability using the Wavelet Adaptive Multiscale Representation (WAMR) SAMUEL PAOLUCCI, ZACHARY ZIKOSKI, University of Notre Dame — The parallel WAMR method is used to simulate the Richtmyer-Meshkov instability of a shocked and re-shocked thin varicose heavy gas layer. The problem is based on the experiments of Balakumar et al.,¹ and modelled by the compressible Navier-Stokes equations for a multi-component gas mixture. The WAMR method provides dynamic, spatial grid adaptivity to efficiently capture features over a wide range of physical scales. Results of the simulation are compared with experimental measurements. Additionally, sensitivity of the long-time behavior of the gas layer to various secondary perturbations is investigated.